

## CLAIMS

We claim:

- 5 1. A method of increasing crop yield comprising administering an effective amount of a composition comprising a peptide and a polysaccharide on a seed of said crop or to a soil in which said crop is cultivated, wherein the peptide is present in an amount of 2-90% by weight of the dry weight of the total peptide-polysaccharide complex and the polysaccharide is present in an amount of 10-98% by weight of the dry weight of the peptide-polysaccharide complex.  
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2. A method for accelerating crop emergence comprising administering an effective amount of a composition comprising a peptide and a polysaccharide on a seed of said crop or to a soil in which said crop is cultivated, wherein the peptide is present in an amount of 2-90% by weight of the dry weight of the total peptide-polysaccharide complex and the polysaccharide is present in an amount of 10-98% by weight of the dry weight of the peptide-polysaccharide complex.  
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3. A method accelerating crop maturity comprising administering an effective amount of a composition comprising a peptide and a polysaccharide on a seed of said crop or to a soil in which said crop is cultivated, wherein the peptide is present in an amount of 2-90% by weight of the dry weight of the total peptide-polysaccharide complex and the polysaccharide is present in an amount of 10-98% by weight of the dry weight of the peptide-polysaccharide complex.  
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4. The method of claims 1, 2 and 3, wherein the peptide is present in an amount of 2-30% by weight of the dry weight of the peptide-polysaccharide complex and the polysaccharide is present in an amount of 70%-98% by weight of the dry weight of the peptide-polysaccharide complex.  
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5. The method of claims 1, 2 and 3, wherein administering is performed before seeding of said crop.
6. The method of claims 1, 2 and 3, wherein administering is performed simultaneously with seeding of said crop.
7. The method of claim 1, wherein administering is performed after seeding of said crop.
- 10 8. A seed composition comprising a crop seed and coating, said coating comprising a peptide and a polysaccharide, wherein the peptide is present in an amount of 2-90% by weight of the dry weight of the total peptide-polysaccharide complex and the polysaccharide is present in an amount of 10-98% by weight of the dry weight of the peptide-polysaccharide complex.
- 15 9. The composition of claim 8, wherein the peptide is present in an amount of 2-30% by weight of the dry weight of the peptide-polysaccharide complex and the polysaccharide is present in an amount of 70%-98% by weight of the dry weight of the peptide-polysaccharide complex.
- 20 10. The composition of claim 8, wherein the crop seed is a potato.
11. The composition of claim 8, wherein the crop seed is a grain.
- 25 12. The composition of claim 11, wherein the grain is barley.
13. The method of claims 1, 2 and 3, wherein the peptide is isolated from a natural, synthetic or recombinant source.
- 30 14. The method of claims 1, 2 and 3, wherein the peptide is zein.

15. The method of claims 1, 2 and 3, wherein the polysaccharide is isolated from a natural, synthetic or recombinant source.

16. The method of claim 15, wherein the polysaccharide is a cellulosic derivative.

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17. The method of claim 16, wherein the cellulosic derivative is selected from a group consisting of carboxymethylcellulose, methylcellulose, hydroxypropyl cellulose, hydroxypropyl methylcellulose, and microcrystalline cellulose.

10 18. The method of claims 1, 2 and 3, wherein the polysaccharide is starch or a starch derivative.

19. The method of claims 1, 2 and 3, wherein the polysaccharide is pectin.

15 20. The method of claims 1, 2 and 3, wherein the polysaccharide is derived from an exudate gum polysaccharide.